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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/108,447	07/01/1998	GERALD N. COLEMAN	97-677	2408

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EXAMINER

MCAVOY, ELLEN M

ART UNIT	PAPER NUMBER
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1764

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/108,447

Applicant(s)

COLEMAN ET AL.

Examiner

Ellen M. McAvoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-34, 37, 38 and 40-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-34, 37, 38 and 40-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 28 December 2006 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 31-34, 37, 38 and 40-52 are still rejected under 35 U.S.C. 103(a) as being unpatentable over Dubin (5,284,492) in combination with Ford (3,756,794), Gunnerman (WO 95/27021) and Schwab (5,669,938).

Applicants' arguments filed 28 December 2006 have been fully considered but they are not persuasive. As previously set forth, Dubin discloses a fuel oil composition comprising an emulsion of water and a fuel oil which is used as a combustion fuel for a gas turbine which results in reduced nitrogen oxides emissions and improved combustion efficiency. The emulsion can be either a water-in-fuel oil or a fuel oil-in-water emulsion. The oil phase comprises a light fuel oil, by which is meant a fuel oil having little or no aromatic compounds and consists

essentially of relatively low molecular weight aliphatic and naphthenic hydrocarbons. See column 3, lines 41-49. The emulsions which have the most practical significance in applications when combusted alone are those having about 5% to about 50% water and are preferably about 10% to about 35% water-in-fuel oil by weight. Although demineralized or purified water is not required, Dubin teaches that the use of demineralized water in the emulsion is preferred. See column 4, lines 7-35. An emulsification system is most preferably employed to maintain the emulsion. A desirable emulsification system comprises about 25% to about 85% by weight of an amide, especially an alkanolamide or n-substituted alkyl amine; about 5% to about 25% by weight of a phenolic surfactant including ethoxylated alkylphenols; and about 0% to about 40% by weight of a difunctional block polymer terminating in a primary hydroxyl group. The addition of a component selected from the group consisting of dimer and/or trimer acids, sulfurized castor oil, phosphate esters, and mixtures thereof significantly increase the lubricity of the emulsion. The addition of a corrosion inhibitor is taught in column 8, lines 56 to column 9, line 2. Dubin differs from the instant claims in not teaching the addition of an ignition delay modifier including ammonium nitrate as an emulsion stabilizer and an antifreeze additive (dependent claim 51). However, as evidenced by Ford, Gunnerman and Schwab, such additives are well-known in hydrocarbon fuel emulsions.

Ford discloses emulsified fuel compositions comprising a hydrocarbon fuel such as diesel and gasoline fuels, an emulsifier, water and an emulsion stabilizer. Ammonium nitrate may be added to the emulsion as a freezing point depressant or an antifreeze additive in an amount of 0.1 to 10% by weight, preferably 0.3 to 0.7 % by weight. See column 1, line 49 to column 2, line 26.

Gunnerman discloses aqueous fuel compositions for internal combustion engines. The fuel comprises a fluid emulsion comprising 20 to 80 vol. % water which may be purified, 40 to 60 % carbonaceous fuel such as gasoline and diesel fuels, about 2 to less than 20 vol. % alcohol such as methanol and ethanol, and about 0.3 to 1 vol. % of a nonionic emulsifier. See page 1, lines 30-36. Freezing-point observations indicated a dramatic lowering of the freezing point as the percentage of alcohol is increased. See page 8, lines 17-19.

Schwab discloses diesel fuel emulsions containing an emission reducing amount of at least one fuel-soluble organic nitrate ignition improver such as 2-ethylhexyl nitrate.

The examiner maintains the position that it would have been obvious to the skilled artisan to have followed the teachings of the prior art and to have added the ammonium nitrate anti-freeze additive of Ford, the organic nitrate ignition improver of Schwab, and the anti-freeze inhibitor of Gunnerman to the hydrocarbon fuel emulsion of Dubin in order to provide a hydrocarbon fuel emulsion having improved anti-freeze and ignition properties.

In response, applicants amended independent claim 31 to require that the neutralizer component and the coupling agent be present in the fuel emulsion composition. The coupling agent is "one selected from a group consisting of: a diacid of the Diels-Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Adler adducts of unsaturated fatty acids and wherein said neutralizer combines with a select acid to form a water soluble salt." However, both of these components are taught in Dubin as additives to the fuel emulsion composition. Dubin discloses the addition of mono-, di- and triethanolamines (applicants' neutralizer

component) in column 5, lines 24-26, and the addition of dimer and trimer acids made by the Diels Alder reaction (applicants' coupling agent) in column 7, lines 24-45.

Applicants argue that:

“Applicants maintain that Dubin does not teach the emulsion recited in claim 31 because Dubin does not teach a neutralizer and acid that react to form a water soluble salt. Dubin teaches that the di- and tri-acids are part of a group that may be added to the fuel to increase lubricity. See Col. 7, lines 15-22. The Dubin fuel takes advantage of the fact that the Diels-Alder reaction generates mono-, di-, and tri-acids. Furthermore, Dubin gives the preferred percentages of such acids in col. 7, lines 52-66. Claim 31, on the other hand, requires that the acids react with the neutralizer to form a water-soluble salt in the emulsion. This is to allow the neutralizer and corrosion agent to be used in the high temperature of an internal combustion engine. For these reasons, Applicants again set forth that the rejections can not be maintained ...”

This is not deemed to be persuasive because Dubin allows for the addition of both the neutralizer and the coupling agent of applicants claims to the emulsion. Applicants teach in the specification on page 9 that the neutralizer component may be an alkanolamine including amino methyl propanol, triethanolamine and diethanolamine. As set forth above, Dubin allows for the addition of mono-, di- and tri-ethanolamines including oleic triethanolamine in column 5, lines 29-30. Additionally, applicants teach in the specification on page 9 that “A specific example of a suitable coupling agent is Diacid 1550.” The diacids disclosed in Dubin may also be Diacid 1550. See column 7, lines 44-45. Thus the examiner is of the position that it is not clear how the same additive(s) could have different properties.

Applicants argue that:

“The Examiner has also not provided evidence of a proper motivation to combine the references. The Examiner merely asserts that one would combine the references to improve the anti-freeze and ignition properties of a fuel emulsion. The Examiner has not provided evidence that there is a need in Dubin for such properties. The Examiner is

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reminded that just because something is within the capabilities of one of ordinary skill in the art does not by itself establish obviousness. *See Ex Parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)."

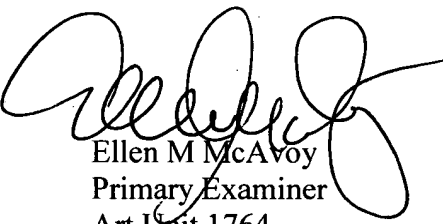
In response to applicants' argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the purposes for the various additives described in the references are more than adequate to suggest their common usage in a fuel emulsion composition. It has been held that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art. *See In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ellen M McAvoy
Primary Examiner
Art Unit 1764

EMcAvoy
March 14, 2007